

Claims

- [c1] 1.A material for forming a customized holographic or optically variable image on a substrate, the material comprising:
- a plurality of layers comprising a thermally stable layer, a wear resistant layer or top coat, an embossable layer, a reflective layer overlaid upon the embossable layer and a heat activated adhesive layer serving to attach the material to the substrate upon heat activation;
- the embossable layer comprising a plurality of embossed consecutive panels, each panel being holographically or optically variably configured to reflect incoming light at a predetermined holographic or optically variable reflection angle α_n , which predetermined angle α_n is different for each panel.
- [c2] 2.The material of claim 1, wherein each holographically or optically variably configured panel comprises an embossment of the predetermined holographic or optically variable reflection angle α_n , resulting in a multi-panel arrangement wherein each panel is embossed to reflect incoming light at the predetermined holographic or optically variable angle α_n , which angle α_n is different from

the angles of reflection of the embossings in other panels.

[c3] 3. The material of claim 1, wherein each holographically or optically variably configured panel comprises a plurality of pixels embossed in such a way that all pixels disposed within the same panel reflect incoming light at a predetermined angle of reflection α_n , resulting in a multi-panel arrangement wherein each panel comprises pixels embossed to reflect incoming light at an angle different from the angles of reflection of the pixels in other panels.

[c4] 4. The material of claim 1, further comprising a release layer overlaid upon the thermally stable layer, and a tie layer overlaid upon the heat activated adhesive layer.

[c5] 5. The material of claim 1 provided in the form of a ribbon.

[c6] 6. The material of claim 1, wherein each angle α_n corresponds to a predetermined number.

[c7] 7. The material of claim 6, wherein a plurality of angles α_n ($n \leq 256$) correspond to a plurality of predetermined numbers forming a sequence of numbers.

- [c8] 8. The material of claim 7, wherein the sequence is utilized in a reading device which is programmed to operate only with a holographic or optically variable material associated with the sequence.
- [c9] 9. A method of forming a holographic or optically variable image on a substrate, the image being comprised of image forming pixels, the method comprising:
providing a transfer material having an embossable layer comprising a plurality of consecutive panels, each panel being holographically or optically variably configured to reflect incoming light at a predetermined holographic or optically variable reflection angle α_n , which predetermined angle α_n is different for each panel; and
forming the holographic or optically variable image on the substrate by selective pixel transferring of the image forming pixels from at least one panel onto the substrate.
- [c10] 10. The method of claim 9, wherein selective pixel transferring comprises heat activating of each pixel of the image forming pixels and causing each pixel to separate from the transfer material and to adhere to the substrate.
- [c11] 11. The method of claim 10, wherein heat activating of each pixel comprises acting upon each panel by a printer

head.

- [c12] 12. The method of claim 9, further comprising providing a computer storing the holographic or optically variable image, the computer controlling selective pixel transferring of the image forming pixels from the transfer material to the substrate to form the holographic image.
- [c13] 13. The method of claim 9, wherein selective pixel transferring comprises pixel-by-pixel transferring.
- [c14] 14. The method of claim 11, wherein selective pixel transferring comprises pixel-by-pixel transferring.
- [c15] 15. The method of claim 9, wherein each holographically or optically variably configured panel comprises an embossment of the predetermined holographic or optically variable reflection angle α_n , resulting in a multi-panel arrangement wherein each panel is embossed to reflect incoming light at the predetermined holographic angle α_n , which angle α_n is different from the angles of reflection of the embossings in other panels.
- [c16] 16. The method of claim 9, wherein each holographically or optically variably configured panel comprises a plurality of pixels embossed in such a way that all pixels disposed within the same panel reflect incoming light at a predetermined angle of reflection α_n , resulting in a

multi-panel arrangement wherein each panel comprises pixels embossed to reflect incoming light at an angle different from the angles of reflection of the pixels in other panels.

[c17] 17.The method of claim 9, wherein forming the holographic or optically variable image comprises designing the image by means of a computer program.

[c18] 18.The method of claim 9, wherein forming the holographic or optically variable image comprises printing the image to a local or remote printer.

[c19] 19.The method of claim 18, wherein the image is send to the local or remote printer via the Internet.